SAILING DIRECTIONS CORRECTIONS

PUB 120 1 Ed 1997 LAST NM 51/00
Page V—Line 7; insert after:
The Prudent Mariner XII
(NIMA) 1/01

Page XI; insert after:
New Page XII from back of this Subsection.
(NIMA) 1/01

PUB 140 1 Ed 1997 LAST NM 51/00
Page V—Line 8; insert after:
The Prudent Mariner XII
(NIMA) 1/01

Page XI; insert after:
New Page XII from back of this Subsection.
(NIMA) 1/01

PUB 145 8 Ed 2000 LAST NM 53/00
Page 3—Line 49/R; insert after:
New tabled titled "Grand Manan Island—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 17—Line 13/L; insert after:
New table titled "Saint John Harbor—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 30—Line 14/L; insert after:
New table titled "Yarmouth—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 92—Line 34/L; insert after:
New table titled "Sable Island—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 164—Line 44/L; insert after:
New table titled "Charlottetown Harbour—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 196—Line 13/L; insert after:
New table titled "Chatham Harbor—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 233—Line 10/R; insert after:
New table titled "Sept-Iles—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 261—Line 22/R; insert after:
New table titled "Quebec Harbor—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

Page 273—Line 28/L; insert after:
New table titled "Montreal Harbor—Weather Charactaristics" from back of this Subsection.
(NIMA; PUBS 011/2000) 1/01

PUB 157 8 Ed 2000 LAST NM 48/00
Page 53—Line 38/R; insert after:
There are two inbound reserve anchorages, located at 37˚04.4'N, 126˚17.7'E, 4.5 miles W of Changan So and 37˚19.7'N, 126˚28.8'E, 3 miles WSW of Pukchangja So, respectively. An outbound reserve anchorage is located at 37˚21.3'N, 126˚30.8'E, 1.7 miles NW of Palmi Do.
(BA NM 44/00, Section IV) 1/01

PUB 160 1 Ed 1998 LAST NM 52/99
Page V—Line 7; insert after:
The Prudent Mariner XII
(NIMA) 1/01

Page XI; insert after:
New Page XII from back of this Subsection.
(NIMA) 1/01

PUB 180 2 Ed 1997 LAST NM 51/00
Page V—Line 8; insert after:
The Prudent Mariner XII
(NIMA) 1/01

Page XI; insert after:
New Page XII from back of this Subsection.
(NIMA) 1/01

PUB 200 3 Ed 1997 LAST NM 7/99
Page V—Line 8; insert after:
The Prudent Mariner XII
(NIMA) 1/01

Page XI; insert after:
New Page XII from back of this Subsection.
(NIMA) 1/01

COAST PILOT CORRECTIONS

COAST PILOT 1 31 Ed 1998 Change No. 23
LAST NM 52/00

Page 1—Paragraph 2, line 2; read:
through U.S. Coast Guard Local Notices to Mariners. These amendments are also available on the internet at http://critcorr.ncd.noaa.gov. A subscription ...
(44/00 CG5) 1/01

Page 89—Paragraph 42, line 6; read:
50 CFR 224.103, Chapter 2).
(FR 3/23/99; 50 CFR 224.103) 1/01

Page 242—Paragraph 94, line 7; read:
CFR 226.203(a) and (b); Chapter 2, for limits and regulations).
(FR 3/23/99; 50 CFR 226.203) 1/01

Page 253—Paragraph 47, line 9; read:
CFR 226.101 and 226.203(b), chapter 2, for habitat boundary ...
(FR 3/23/99; 50 CFR 226.101; 50 CFR 226.203) 1/01

COAST PILOT 3 34 Ed 1999 Change No. 8
LAST NM 52/00

Page 119—Paragraph 137, lines 5 to 8; read:
Delaware Canal, and Delaware Bay and River. Chesapeake and Interstate Pilots Association has an office in Norfolk (telephone, 757-855-2733).
(CL 1680/00) 1/01

Page 129—Paragraph 69, line 3; read:
chapter 2, for limits and regulations.)

Pilotage, Cape May Harbor.-Pilotage is compulsory for all foreign vessels of 100 gross tons or more and all U.S. vessels under register engaged in foreign trade or commerce of 100 gross tons or more. Pilotage is optional for all U.S. Government vessels and for all U.S. vessels under enrollment in a coastwise trade if they have on board a pilot licensed by the Federal Government to operate in these waters. Pilotage service is available from the Pilots' Association for Bay and River Delaware on a limited 24-hour basis. Arrangements for pilotage can be made through ships' agents or directly. A 24-hour advance notice is requested with updated 6-hour ETA. Pilots will board just southwestward of Lighted Bell Buoy 2CM off Cape May Inlet. (See Pilotage, Bay and River Delaware, Chapter 6.)
(CL 1675/00) 1/01

Page 147—Paragraph 120, lines 2 to 4; read:
Delaware Bay, Delaware River, and tributaries thereof is compulsory for all foreign vessels of 100 gross tons or more and all U.S. vessels under register engaged in the foreign trade or commerce of 100 gross tons or more. Pilotage is optional for all U.S. Government vessels and for all U.S. vessels in the coastwise trade that have on board ...
(CL 1675/00) 1/01

Page 147—Paragraph 122, lines 2 to 7; read:
maintains its office in Philadelphia, PA, a pilot station in Lewes, DE, and a pilot watch tower on Cape Henlopen. The office address is 800 South Columbus Blvd., Philadelphia, PA 19147; telephone, 215-465-8340; fax, 215-465-3970; telex, 5101002653; cable, DELPILOTS in Philadelphia; and email address: dispatch@delpilots.com. The pilot station address is 41 Cape Henlopen Drive, Lewes, DE 19958; telephone, 302-645-2228; fax, 302-645-7822. The pilot watch tower at Cape Henlopen's telephone number is 302-645-8538; fax, 302-645-1728. Pilots ...
(CL 1675/00) 1/01

Page 147—Paragraph 125, lines 3 to 15; read:
public vessels between Cape Henlopen, Philadelphia and Delair. Arrangements for pilots are made through ships' agents or the pilot office in Norfolk (telephone, 757-855-2733). Pilots use commercial launch services and will meet vessels in the Pilotage Area off Cape Henlopen. Pilots monitor VHF-FM channel 16 one hour prior to last ETA. Advance pilot ordering requested with 6-hour ETA update and any subsequent changes requested. The pilot office can also be contacted through the Maritel Marine Operator.
(CL 1680/00) 1/01

Page 166—Paragraph 83, lines 4 to 15; read:
Pilots will meet vessels between Cape Henlopen, any port or place on the Delaware Bay and River, or any port or place on the Chesapeake Bay and its tributaries and provide all pilot services required when vessels use the canal. Arrangements for pilots are made through ships' agents or the pilot office in Norfolk (telephone, 757-855-2733). The pilots use commercial launch services. Pilots monitor VHF-FM channel 16 one hour prior to last ETA. Advance pilot orders requested with 6-hour ETA update and any subsequent changes requested. The pilot office can also be contacted through the Maritel Marine Operator.
(CL 1680/00) 1/01

Page 176—Paragraph 46, lines 3 to 11; read:
vessels between Cape Henry and various ports and places on the Chesapeake Bay and its tributaries. Arrangements for pilots are made through ships' agents or the pilot office in Norfolk (telephone, 757-855-2733). The pilots use commercial launch services. Pilots begin radio watches at the launch service on VHF-FM channel 16 one hour prior to last ETA. Advance pilot orders requested with 6-hour ETA update and any subsequent changes requested. The pilot office can also be contacted through the Maritel Marine Operator.
(CL 1680/00) 1/01

Page 185—Paragraph 14, lines 7 to 14; read:
757-855-2733). Vessels requesting a river pilot only are usually boarded off Newport News Point. Pilots from sea are boarded at Cape Henry. Pilots use commercial launch services. Pilots begin radio watches at the launch service on

COAST PILOT 3 (Continued)

VHF-FM channel 16 30 minutes prior to last ETA. Advance pilot orders requested with 3-hour ETA update and any subsequent changes requested. The pilot office can also be contacted through the Maritel Marine Operator.
(CL 1680/00) 1/01

Page 192—Paragraph 29, lines 3 to 5; read:
public vessels to Yorktown. Arrangements for pilots may be made through ships' agents or the pilot office in Norfolk (telephone, 757-855-2733).
(CL 1680/00) 1/01

Page 201—Paragraph 21, lines 3 to 5; read:
public vessels to Piney Point. Arrangements for pilots may be made through ships' agents or the pilot office in Norfolk (telephone, 757-855-2733).
(CL 1680/00) 1/01

Page 202—Paragraph 21, line 9; read:
provide all pilot services directly to the Potomac River. Pilots may also meet vessels off the mouth of the river. Contact the pilot office for information.
(CL 1680/00) 1/01

Page 249—Paragraph 45, line 11 to Paragraph 46, line 1; read:
provide all pilot services required from the port of departure to the port of arrival. Arrangements for pilots may be made through the ships' agents or the pilot office in Norfolk (telephone, 757-855-2733).

The Interports Pilots Agency, Inc. offers pilotage to ...
(CL 1680/00) 1/01

COAST PILOT 7 32 Ed 2000 Change No. 2
LAST NM 50/00

Page 344—Paragraph 204; read:

Haro Strait extends N from the S end of San Juan Island for about 18 miles to Turn Point Light on Stuart Island, thence Boundary Pass leads NE for 13 miles to its junction with the Strait of Georgia between East Point, the E end of Saturna Island, B.C., and the W end of Patos Island, the small United States island; both of which are marked by lights. These waterways have widths from 1.5 to 5 miles, and the depths are generally great.
(CL 1204/00) 1/01

Page 344—Paragraph 208, lines 3 to 5; read:
established a **tanker safety area** at the intersection of Haro Strait and Boundary Pass within a two nautical mile arc centered on Turn Point Light (48˚41'18"N., 123˚14'12"W.).
(CL 1204/00; LL/00) 1/01

Page 344—Paragraphs 211 to 213; read:

Tidal currents.-In Haro Strait and Boundary Pass, the flood current sets N; the ebb current sets in the opposite direction. The ebb usually runs longer and has a greater velocity. At the N entrance to Boundary Pass, the flood sets E along the N and S sides of Sucia Islands and across Alden Bank; the velocity is about 1 to 2 knots. The Current has moderate velocity between Sucia and Orcas Islands. There is a large, daily inequality in the current (see Tidal current Tables for predicted times and velocities). Heavy, dangerous tide rips occur between East Point on Saturna Island and Patos Island, and for two miles N in the Strait of Georgia. Tide rips also occur on the ebb between Henry Island and Turn Point, as well as around Turn Point where the ebb may attain a velocity of 6 knots during large tides. The flood current sets E from Discovery Island across the S end of Haro Strait until close to San Juan Island. This E set especially noticeable during the first half of the flood. Heavy tide rips occur N of Middle Bank as well as on the Bank and around Discovery Island.

Rocky **Middle Bank**, with a least depth of 10 fathoms, is in the S approach to Haro Strait. The bank is about 3.5 miles long, and the least depth is in its NE part and 5.7 miles SW of Cattle Point Light on the southernmost tip of San Juan Islands. Heavy tide rips, dangerous to small craft, form in the vicinity of this bank in bad weather.

Beaumont Shoal, covered 9 fathoms, lies 3 miles NW of the NW corner of Middle Bank and is marked by a lighted buoy. A second small bank with a least depth of 7 fathoms lies 1 mile to the north. In bad weather, heavy tide rips form over these banks.
(CL 1204/00) 1/01

Page 347—Paragraph 260; read:

Richardson is a small settlement on the N shore of the cove N of Iceberg Point, and close N of **Charles Island**. Five fuel tanks are prominent from seaward. A wharf directly below the fuel tanks has a face 120 feet long and extends over rocks to a depth of 17 feet. Gasoline and diesel fuel may be obtained.
(CL 1204/00; 40/98 CG13) 1/01

Page 352—Paragraph 317, lines 5 to 7; read:
point of Obstruction Island, marks the W entrance to the pass. A group of bare rocks, marked by ...
(CL 1204/00) 1/01

Page 353—Paragraph 330, line 4; read:
deep, and the most important dangers are marked. A bank with a least depth of 7 fathoms is located 0.3 mile E of Orcas Island and one mile WSW of Strawberry Island at about 48˚33'19.4"N., 122˚45'39.6"W.
(CL 1204/00) 1/01

Page 353—Paragraph 337; read:

A bank covered 10 to 20 fathoms extends across the S entrance to Rosario Strait. A shoal in the W part of the bank, 1.6 miles E of Davidson Rock, is covered 4 fathoms and marked by a lighted bell buoy. **Lawson Reef**, 0.6 by 0.3 mile in extent, in the E part of the bank, is 1.7 miles W of Deception Island. The reef has a least depth of 2.2 fathoms and is marked by a lighted bell buoy.
(CL 1204/00) 1/01

COAST PILOT 7 (Continued)

Page 353—Paragraph 338, line 5; read:
width is reduced to 150 yards by **Pass Island**. A fixed highway ...
(CL 1204/00) 1/01

Page 353—Paragraph 338, lines 8 to 9; read:
Overhead telephone and power cables 50 yards and 0.2 mile E of the bridge have a minimum clearance of 220 feet.
(CL 1204/00; NOS 18427) 1/01

Page 353—Paragraph 342, lines 2 to 7; read:
NW of **West Point**, the NW end of Whidbey Island. A shoal which bares at low water extends 175 yards (160 meters) S of Deception Island. Foul ground extends 262 yards (240 meters) NW of West Point. The passage between these two hazards is 200 yards (183 meters) wide with a least depth of 2.5 fathoms and great care should be taken when navigating in this area. **Northwest Pass**, N of Deception Island, is the preferred route. The Northwest Pass channel is deeper, but narrows and follows close to **Lighthouse Point**.
(CL 1204/00) 1/01

Page 353—Paragraph 344, lines 6 to 10; read:
electricity, water, ice, and marine supplies are available. Two marine service and repair facilities are W of the marina. A public small-craft facility with berthing and a launching ramp is E of the marina.
(CL 1204/00) 1/01

COAST PILOT 7 32 Ed 2000 Change No. 3

Page 356—Paragraph 351, lines 3 to 11; read:
marina. The entrance channel is protected by jetties and marked by private lights. The E side of the entrance to the marina is subject to shoaling. The W side of the entrance had reported depths of 8 to 14 feet in 1997. Gasoline, diesel fuel, water, ice, about 250 berths with electricity, transient berths, dry storage facilities, two 1 .5-ton hoists, a 24-ton lift, and marine supplies are available at the marina. Hull, engine, and electronic repairs can be made. A private company located at the W end of the marina provides heavy transport service to the islands. A road connects the bay with a highway, providing access to the State ferry terminal in Ship Harbor, the Anacortes airport, and the city of Anacortes.
(CL 1204/00) 1/01

Page 358—Paragraph 383, lines 4 to 6; read:
at its narrowest point, has depths of 8 to 18 fathoms. Lighted buoys mark the channel at the W end.
(CL 1204/00) 1/01

Page 358—Paragraph 390, lines 11 to 17; read:
pump-out station are available. A **harbormaster** assigns berths, and can be contacted on VHF-FM channel 66a. A business at the basin operates a fuel dock at which gasoline and diesel fuel are available. Water, ice, supplies, a 4-ton lift, and a 5-ton lift capable of handling vessels to 55 feet long are available, along with hull, engine, and electronic repairs.
(CL 1204/00) 1/01

Page 358—Paragraph 395, line 3; read:
Tugs monitor VHF-FM channel 16.
(CL 1204/00) 1/01

Page 358—Paragraph 400, line 1; read:
Wharves.-The Port of Anacortes operates three deep-draft ...
(CL 1204/00) 1/01

Page 358—Paragraph 400, line 6 to Paragraph 402, line 2; read:
port authorities.) Water is available at the three port wharves.
Port of Anacortes, Pier No. 1 (48˚31'20"N., 122˚36'40"W.): wooden pilings, 540-foot berthing space; 33 feet alongside; deck height, 16 feet; forklifts; receipt and shipment of general cargo.
Port of Anacortes, Pier No. 2 (48˚31'20"N., 122˚36'24"W.): concrete piling with concrete surface, 1,113-foot berthing space with dolphins; 44 feet ...
(CL 1204/00) 1/01

Page 358—Paragraph 402, line 5; read:
wharf is marked on each end by a private light.
Port of Anacortes, Curtis Wharf (48˚31'20"N., 122˚37'00"W): steel piling with concrete surface, 313-foot berthing with dolphins; 28 feet reported alongside; deck height, 16 feet; one acre of unpaved open storage.
(CL 1204/00) 1/01

Page 359—Paragraph 409, lines 2 to 4; read:
Padilla Bays. The two long Tesoro and Equilon Refinery piers extend N to deep water from the N end of the point. The W pier, owned by Tesoro Northwest, has a 7,150-foot approach trestle, ...
(CL 1204/00) 1/01

Page 359—Paragraph 409, line 9; read:
feet reported alongside. The Equilon Pier, 0.5 mile E of the ...
(CL 1204/00) 1/01

Page 359—Paragraph 410, line 1; read:
About 200 yards from the Equilon Pier, when making ...
(CL 1204/00) 1/01

COAST PILOT 7 32 Ed 2000 Change No. 4

Page 219—Paragraph 158, line 4; read:
provides good shelter for over 500 boats. There are four public launch ramps and a 3-ton public hoist in the municipal marina. The boat yard, located just inside the breakwater has a 70-ton travel lift.
(CL 1385/00) 1/01

COAST PILOT 7 (Continued)

Page 220—Paragraph 163, lines 5 to 7; read:
in heavy weather there may be a strong surge in the harbor. The outer end of the breakwater is marked by a light. A fog signal is at the light. The outer harbor is marked by a private lighted junction buoy. The N channel at the junction buoy leads to a private marina and fuel dock.
(CL 1385/00; 5/00 CG11) 1/01

Page 220—Paragraph 171, line 6; read:
Bay Boatworks Company on VHF-FM channel 16. The harbormaster can be contacted by phone at (831) 594-7760 or by the Internet website at http://www.monterey.org.
(CL 1385/00) 1/01

Page 220—Paragraph 173, line 4; read:
handled by trucks directly to the pier; a 3-ton hoist is at the pier on the marina side.
(CL 1385/00) 1/01

Page 220—Paragraph 174, lines 3 to 4; read:
shops.
(CL 1385/00) 1/01

Page 295—Paragraph 200; read:
At the entrance to Yaquina Bay and River, the buoys cannot be relied upon to indicate the best water, and in the river, depths are subject to frequent change. Recreational boaters unfamiliar with the area are advised to contact the Coast Guard on VHF-FM channel 16 or telephone (541) 265-5381 for the latest bar conditions, advisory, or to arrange an escort when unfamiliar with bar conditions. Professional mariners desiring to enter Yaquina Bay and River should employ a pilot or someone with local knowledge.
(CL 1174/00) 1/01

Page 295—Paragraph 211, lines 4 to 6; read:
465 feet of berthing space, 30 to 32 feet reported alongside, and a deck height of 21 feet. Berth 2 (barge dock), just NE of the turning basin, has 250 feet of berthing space, 27 feet reported alongside, and a deck ...
(CL 1174/00) 1/01

Page 295—Paragraph 212; strike out.
(CL 1174/00) 1/01

Page 295—Paragraph 213, line 2; read:
boat basin that can handle small craft up to 80 feet on the S side of the bay about 350 yards E of the ...
(CL 1174/00) 1/01

Page 295—Paragraph 213, lines 7 to 10; read:
ramp at the head of the boat basin. In August 2000, the controlling depth was 6 feet. Gasoline, berths, diesel fuel, electricity, water, ice, and a pumpout facility are available. Hull, engine, and shaft repairs can be made. Facilities can be contacted on VHF-FM channel 12 by hailing the Port of Newport South. The Port of Newport Internet address is www.portofnewport.com.
(BP 172042; CL 1174/00) 1/01

Page 295—Paragraph 214, lines 7 to 14; read:
repair facilities on the river above Newport. Just N of **Oneatta Point**, 3.8 miles above the highway bridge at the entrance to the bay, full marine services and repairs are available. The facility has two travel lifts, one 15-ton and one 70-ton, and two 60-ton cranes.
(CL 1174/00) 1/01

Page 295—Paragraph 216, lines 3 to 7; read:
Yaquina, has a clearance of 77 feet. At Yaquina, there is moorage and a 6,000 pound hoist. Fuel and supplies can be purchased. Several small marinas are along the river between Newport and Toledo. (See Newport small-craft facilities description.)

Toledo, about 11.5 miles above the entrance has large lumbermills and a papermill. The least depths alongside the wharves are 10 feet. Toledo also has a moorage capability for about 20 boats 65 feet or less. There is access to a 40-ton travel lift and a 300-ton marine dry dock. The fixed highway ...
(CL 1174/00) 1/01

Page 296—Paragraph 226, lines 12 to 13; read:
knowledge. **Depoe Bay Coast Guard Station,** at the inner basin, monitors VHF-FM channel 16 or may be contacted at (541) 765-2123.
(CL 1174/00) 1/01

COAST PILOT 7 32 Ed 2000 Change No. 5

Page 213—Paragraph 3, lines 5 to 6; read:
coastline and the three nautical mile limit for the state of California extending offshore from the mouth of the Santa Rosa Creek (35˚34'N.) in ...
(CL 1384/00) 1/01

Page 213—Paragraph 3, lines 9 to 10; read:
Department of Fish and Game, Marine Region, 20 Lower Ragsdale Drive, Suite 100, Monterey, CA 93940, telephone (831) 649-2870.
(CL 1384/00) 1/01

Page 282—Paragraph 262, line 4; read:
which Wilson Creek empties. **Wilson Rock**, awash, is ...
(CL 1304/00) 1/01

Page 282—Paragraph 262, line 7; read:
the line from this rock to another rock, 37 feet high, SW of False ...
(CL 1304/00) 1/01

Page 304—Paragraph 73, line 1; read:
Embarking and disembarking marine pilots is accomplished using a pilot boat or, on a trial basis, with a helicopter. Pilot boat operations remain unchanged except as

COAST PILOT 7 (Continued)

required in individual circumstances. Any changes will be given to vessels by VHF radio. The helicopter, if used, will deliver the pilot either by winching or landing on deck. Operations will be in accordance with international regulations, and particularly with the rules of the International Maritime Pilots Association.

The bar pilots maintain one of two pilot boats on call at all ...

(CL 1945/99) 1/01

Page 304—Paragraph 76, line 2; read:

contact the pilot station about one hour prior to arrival for boarding ...

(CL 1945/99) 1/01

Page 304—Paragraph 76, line 10; read:

not be rigged on inbound vessels. If using the helicopter, it will call as 'Pilot Copter Seahawk', using VHF-FM channel 16 to establish communications and VHF-FM channel 9 for operations. Remain on VHF-FM channel 9 until the pilot is safely on board. Generally there is no need to alter course or speed if the ship is not rolling. Depending on weather conditions, the Master may be requested to alter course and/or speed to minimize rolling. Masters are asked to watch very carefully for the following points:

Check that there are no horizontal aerials or wires above the helicopter's maneuvering zone.

Check that no loose objects are in the proximity of the maneuvering zone that could be swept up by the wind of the rotor blades.

If necessary provide for wash of area to avoid dust being blown by effects of the rotor.

At night, the maneuvering zone should be well illuminated, but not in such a way as to blind the helicopter.

All ship personnel on deck during helicopter operations must wear protective clothing, goggles and a personal floatation device.

A tag line may be lowered for the ship's crew to use to steady the pilot during winching operations.

If the winching line gets fouled, crew is to free it as quickly as possible.

After being lowered to the deck, the marine pilot will release from the harness as quickly as possible by sliding the belt over his or her head; ship's crew should stand by and steady the pilot if needed during this crucial time.

If the marine pilot is delivered by landing on deck, the ship's crew should stand clear, remaining 100 feet from the helicopter unless directed otherwise. If their assistance is needed, crew will always approach from the right side of the helicopter, never from the front or rear.

For winching operations, the space suggested is a clear area 5 meters in diameter with no obstruction higher than 10 cm, a maneuvering zone that may extend over the ships side 20 meters with no obstructions higher than 3 meters: with the Master's agreement, the helicopter pilot may decide to winch outside of the provided area. The rotor diameter is approximately 10 meters.

For landing on deck, space required, per the International Chamber of Shipping's Guide to helicopter/ship operations, is: a touch down zone 6 meters in diameter with no obstruction higher than 10 cm, a clear zone 20 meters in diameter with no obstruction higher than 25 cm from the level of the touch down zone, a maneuvering zone 26 meters in diameter with no obstructions higher than 1.25 meters from the level of the touch down zone, an extended clear zone at the ship's side preferably 30 meters in diameter with no obstruction higher than .25 meter from the level of the touch down zone, and an extended maneuvering zone preferably 40 meters at the ship's side along the rails with no obstruction higher than 1.25 meters from the level of the touch down zone. Obstruction heights should be measured from the deck level of the touch down zone.

Most container vessels can be worked in accordance with the regulations and requirements cited. Winching may only be possible on a fully stacked ship if the following conditions are available: three 40-foot containers are arranged next to each other with the container tops forming a flat rectangular platform, the height of the platform does not exceed two containers stacked on top of each other, the containers surrounding the platform are not stacked more than three high, and a ladder is attached to the container platform long enough and stable enough to reach the top and secure it to the stack of containers and container platform. A representative from the Bar Pilots will be available at any time to discuss anticipated problems with a particular vessel.

If for any reason the ship's Master or the Bar Pilots consider helicopter use not possible, desireable or practical, pilots will board as usual from boats. Timely communication in this circumstance will assist in avoiding delays.

When transferring pilots off ...

(CL 1945/99) 1/01

Page 305—Paragraph 76, line 22; read:

set to take advantage of optimum tidal conditions. Masters of vessels arriving during a bar closure are advised to stand offshore at least 10 miles west of the Columbia River Approach Lighted Whistle Buoy CR and await instructions from the Bar Pilots. Using the open roadstead in the vicinity of the Columbia River entrance as an anchorage is dangerous in any weather, and Bar Pilots do not recommend anchoring there under any circumstances.

(CL 1945/99) 1/01

Page 312—Paragraph 225, lines 3 to 4; read:

River Patrol; copies of the regulations (Title 19) may be obtained on the on the Internet at http://www.bpcnet.com/codes/portland.htm or for a nominal fee, by contacting the City Auditors Office at 1221 ...

(CL 1167/00) 1/01

Page 436—Paragraph 547, line 1; read:

Chart 19369.-The low coast between Diamond Head and ...

(CL 1301/00) 1/01

Page 436—Paragraph 557, line 1; read:

Charts 19367, 19369, 19362.-Honolulu Harbor is 5 ...

(CL 1301/00) 1/01

COAST PILOT 7 (Continued)

Page 439—Paragraph 628, line 1; read:

Chart 19369.-Keehi Lagoon, 6 miles NW of Diamond ...
(CL 1301/00) 1/01

Page 440—Paragraph 632, line 1; read:

Charts 19357, 19369.-A low, flat plain, 3 to 5 miles wide, borders ...
(CL 1301/00) 1/01

COAST PILOT 8 23 Ed 1999 Change No. 3
LAST NM 52/00

Page 1—Paragraph 2, line 2; read:

through U.S. Coast Guard Local Notices to Mariners, or by contacting the NOS internet website address, http://critcorr.ncd.noaa.gov. A subscription ...
(NOS; 44/00 CG5) 1/01

Page 33—Table; read:

VHF channels	Ship frequency (MHz)		Channel usage
	Transmit	Receive	
1A	156.050	156.050	Port Operations and Commercial, VTS. (see footnote 2).
5A	156.250	156.250	Port Operations or VTS (see footnote 1).
6	156.300	156.300	Intership Safety.
7A	156.350	156.350	Commercial.
8	156.400	156.400	Commercial (Intership only).
9	156.450	156.450	Boater Calling. Commercial and Non-Commercial.
10	156.500	156.500	Commercial.
11	156.550	156.550	Commercial. VTS in selected areas.
12	156.600	156.600	Port Operations. VTS in selected areas.
13	156.650	156.650	Intership Navigation Safety (Bridge-to-bridge). (see footnote 4).
14	156.700	156.700	Port Operations. VTS in selected areas.
15	----------	156.750	Environmental (Receive only). Used by Class C EPIRBs.
16	156.800	156.800	International Distress, Safety and Calling. (See footnote 5).
17	156.850	156.850	State Control.
18A	156.900	156.900	Commercial.
19A	156.950	156.950	Commercial.
20	157.000	161.600	Port Operations (duplex).
20A	157.000	157.000	Port Operations.
21A	157.050	157.050	U.S. Coast Guard only.
22A	157.100	157.100	Coast Guard Liaison/Maritime Safety Information Broadcasts. (Channel 16).
23A	157.150	157.150	U.S. Coast Guard only.
24	157.200	161.800	Public Correspondence (Marine Operator).
25	157.250	161.850	Public Correspondence (Marine Operator).
26	157.300	161.900	Public Correspondence (Marine Operator).
27	157.350	161.950	Public Correspondence (Marine Operator).
28	157.400	162.000	Public Correspondence (Marine Operator).
63A	156.175	156.175	Port Operations and Commercial, VTS. (see footnote 2).
65A	156.275	156.275	Port Operations.
66A	156.325	156.325	Port Operations.
67	156.375	156.375	Commercial. (see footnote 3).
68	156.425	156.425	Non-Commercial.
69	156.475	156.475	Non-Commercial.
70	156.525	156.525	Digital Selective Calling (voice communications not allowed).
71	156.575	156.575	Non-Commercial.
72	156.625	156.625	Non-Commercial (Intership only).

COAST PILOT 8 (Continued)

VHF channels	Ship frequency (MHz)		Channel usage
	Transmit	Receive	
73	156.675	156.675	Port Operations.
74	156.725	156.725	Port Operations.
77	156.875	156.875	Port Operations (Intership only).
78A	156.925	156.925	Non-Commercial.
79A	156.975	156.975	Commercial. Non-Commercial in Great Lakes only.
80A	157.025	157.025	Commercial. Non-Commercial in Great Lakes only.
81A	157.075	157.075	U.S. Government only-Environmental protection operations.
82A	157.125	157.125	U.S. Government only.
83A	157.175	157.175	U.S. Coast Guard only.
84	157.225	161.825	Public Correspondence (Marine Operator).
85	157.275	161.875	Public Correspondence (Marine Operator).
86	157.325	161.925	Public Correspondence (Marine Operator).
87	157.375	161.975	Public Correspondence (Marine Operator).
88	157.425	162.025	Public Correspondence only near Canadian border.
88A	157.425	157.425	Commercial, Intership only.

Footnotes to table:
1. Houston, New Orleans, and Seattle areas.
2. Available only in New Orleans/Lower Mississippi area.
3. Used for Bridge-to-Bridge communications in Lower Mississippi River. Intership only.
4. Ships >20m in length maintain a listening watch on this channel in US waters.
5. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel.

(CL 1606/99) 1/01

Page 118—Paragraph 283, lines 8 to 9; read:
lighted microwave tower at the settlement is visible from Clarence Strait.
(CL 984/99) 1/01

Page 122—Paragraph 356, lines 2 to 6; read:
offers anchorage for two or three small craft of less than 4-foot (1.2 meters) draft to those with local knowledge. Strangers should not attempt entrance. Swinging room is limited by ledges and rocks on the W side of the cove, rocks and pilings to the NE and shoal water toward its head. Several islands are off the entrance, all connected by ledges and foul areas. Entrance should only be made S of the rock, awash, 150 ...
(CL 1518/00) 1/01

Page 183—Paragraph 88, lines 1 to 2; read:
Charts 17300, 17311.-Tracy Arm, the N arm of Holkham Bay, takes a general N direction for 9 miles and then turns E 16 miles to ...
(CL 685/00; NOS 17311) 1/01

Page 210—Paragraph 264, line 1; read:
Chart 17312, 17300.-Hawk Inlet has its entrance on the ...
(CL 668/97) 1/01

Page 215—Paragraph 58, line 6; read:
is abeam, anchor in 12 fathoms, soft bottom, about 0.4 mile from ...
(CL 617/00) 1/01

The Prudent Mariner

Warning on the Use of Floating Aids to Navigation in General to Fix a Navigation Position

The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid. An aid to navigation also refers to any device or structure external to a craft, designed to assist in determination of position. This includes celestial, terrestial, and electronic means, such as the Global Positioning System (GPS) and Differential GPS (DGPS). Here, too, the prudent mariner will not rely solely on any single aid to navigation.

The buoy symbol is used to indicate the approximate position of the buoy body and the sinker, which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice or other natural causes, collisions, or other accidents. Many of these factors also apply to articulated lights. For the foregoing reasons, a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

Use of Foreign Charts

In the interest of safe navigation, caution should be exercised in the use of foreign charts not maintained through U.S. Notice to Mariners.

Foreign produced charts are occasionally mentioned in NIMA Sailing Directions when such charts may be of a better scale than U.S. produced charts. Mariners are advised that if or when such foreign charts are used for navigation it is their responsibility to maintain those charts from the Notice to Mariners of the foreign country producing the charts.

The mariner is warned that the buoyage systems, shapes, colors, and light rhythms used by other countries often have a different significance than the U.S. system.

Mariners are further warned about plotting positions, especially satellite-derived positions such as from GPS, onto foreign charts where the datum is unknown or the conversion from WGS-84 is unknown.

Chart Notes Regarding Different Datums

Particular caution should be exercised during a passage when transferring the navigational plot to an adjacent chart upon a different geodetic datum or when transferring positions from one chart to another chart of the same area, which is based upon a different datum. The transfer of positions should be done by bearings and distances from common features. Notes on charts should be read with care, as they give important information not graphically presented. Notes in connection with the chart title include the horizontal geodetic datum which serves as a reference for the values of the latitude and longitude of any point or object on the chart. The latitudes and longitudes of the same points or objects on a second chart of the same area, which is based upon a different datum, will differ from those of the first chart. The difference may be navigationally significant. Additionally, datum changes between chart editions could significantly affect the positions of navigational aids found in the List of Lights and other NIMA publications.

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Grand Manan Island—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Temperature (˚C)												
Mean	-4.4	-5.0	-1.1	4.4	8.9	13.3	16.7	16.7	13.9	8.9	3.9	-2.2
Mean daily maximum	0.0	-0.6	2.8	7.8	13.3	17.8	21.1	20.6	17.8	12.2	7.2	2.2
Mean daily minimum	-9.4	-8.9	-4.4	0.5	5.0	8.9	12.2	12.2	10.0	5..6	0.5	-6.7
Extreme high	12.2	15.0	15.6	23.9	25.6	28.9	31.1	31.1	28.9	25.6	16.1	13.3
Extreme low	-23.9	-22.8	-19.4	-10.0	-1.7	2.2	4.4	6.1	1.1	-3.3	-11.7	-26.1
Relative Humidity (per cent)												
Mean (1200Z)	89	89	86	81	78	76	79	81	81	81	82	87
Mean (2000Z)	84	84	79	73	71	71	72	71	74	75	77	83
Cloud Cover (tenths)												
Mean (1200Z)	6.8	6.8	6.0	5.9	6.1	5.9	5.7	5.3	5.0	5.8	6.9	6.7
Mean (2000Z)	6.5	6.1	6.1	5.8	5.8	5.4	5.4	5.0	5.0	5.4	7.1	5.8
Precipitation (millimeters)												
Mean	123.4	97.2	120.9	85.6	91.7	79.5	71.1	83.6	87.6	106.9	127.3	163.3
Maximum in 24 hours	88.9	58.4	63.5	53.3	63.5	162.6	86.4	88.9	81.3	137.2	111.8	71.1
Mean amount of snow (cm)	43.7	48.0	32.3	14.0	<1.0	0	0	0	0	<1.0	7.1	30.7
Mean number of days with precipitiation	14	11	14	12	12	11	11	10	10	10	13	12
Wind Speed (knots)												
Mean	9.0	8.9	9.4	8.8	8.8	8.9	7.9	7.6	8.1	8.4	8.4	8.4
Mean number of days with gales	10	7	8	5	7	3	3	2	4	6	7	7
Wind Direction (percentage of observations)												
North	9	8	10	13	10	7	6	7	8	11	14	13
Northeast	9	10	9	9	10	5	2	5	6	8	9	9
East	7	8	11	13	12	13	11	8	8	6	7	5
Southeast	7	7	6	6	7	10	8	6	6	7	5	5
South	6	6	9	7	10	10	11	10	9	8	6	4
Southwest	9	9	11	13	14	15	15	12	15	13	12	9
West	28	29	22	20	20	20	28	27	26	24	24	25
Northwest	22	21	19	15	10	9	7	13	12	15	20	27
Calm	3	2	3	4	7	2	12	12	10	8	3	2
Visibility												
Mean number of days with fog	2	1	3	4	7	8	9	8	6	4	2	1

Saint John Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1014	1012	1013	1014	1014	1013	1014	1015	1018	1017	1015	1015
Temperature (˚C)												
Mean	-0.2	-1.3	0.5	3.4	7.0	11.0	15.5	17.6	15.5	11.5	2.1	-5.0
Mean daily maximum	-2.8	-2.3	2.1	7.9	14.4	19.2	22.1	21.8	17.6	12.1	6.0	-0.2
Mean daily minimum	-13.2	-13.3	-7.5	-1.5	3.7	8.4	11.6	11.5	7.6	2.9	-1.9	9.9
Extreme high	14.0	11.1	15.8	22.8	30.0	32.0	32.8	34.4	28.9	25.6	21.7	16.1
Extreme low	-31.7	-36.7	-30.0	-16.7	-7.8	-2.2	1.1	-0.6	-6.7	-10.6	-16.7	-34.4
Relative Humidity (per cent)												
Mean	82	80	77	75	72	77	80	82	82	83	85	82
Precipitation (millimeters)												
Mean	128.3	102.6	109.9	109.7	123.1	104.8	103.7	103.0	111.3	122.5	146.2	167.6
Maximum in 24 hours	83.0	82.3	74.0	125.5	66.5	108.2	79.4	125.2	74.9	85.3	154.4	92.4
Mean amount of snow (cm)	71.7	56.5	47.6	23.1	2.2	0	0	0	0	2.4	15.1	64.4
Mean number of days with precipitiation	17	14	14	13	14	13	12	12	12	12	15	16
Mean number of days with snow	14	12	10	4	1	0	0	0	0	1	4	12
Wind Speed (knots)												
Mean	11.4	10.7	11.4	10.1	9.7	9.6	8.3	8.2	8.7	9.9	10.9	10.8
Wind Direction (percentage of observations)												
North	14	11	10	9	7	5	4	5	7	7	9	11
Northnortheast	10	9	11	11	5	7	4	4	5	7	8	9
Northeast	5	4	6	5	3	4	2	3	4	5	5	5
Eastnortheast	3	2	3	3	2	1	1	1	2	2	1	2
East	4	4	4	4	4	4	3	3	3	4	3	2
Eastsoutheast	3	3	4	4	4	4	3	2	3	2	3	2
Southeast	1	3	3	4	5	4	4	4	3	4	4	3
Southsoutheast	2	2	2	4	4	4	4	4	3	3	4	3
South	2	4	5	7	12	15	19	16	11	9	7	4
Southsouthwest	3	3	4	9	14	16	17	16	15	9	6	4
Southwest	4	4	5	8	12	12	14	13	10	9	6	4
Westsouthwest	4	5	3	4	4	4	4	4	3	5	3	4
West	8	8	7	4	4	4	5	5	5	8	10	10
Westnorthwest	9	9	8	5	4	3	3	3	5	6	8	8
Northwest	13	5	13	8	6	4	4	5	7	9	11	13
Northnorthwest	12	10	9	6	5	3	3	4	6	6	8	10
Calm	3	4	3	5	5	5	6	8	8	5	4	5
Wind Direction (mean speed in knots)												
North	9.7	9.4	10.7	9.9	9.2	9.6	7.4	7.5	8.6	8.8	9.5	9.1
Northnortheast	9.6	10.4	11.2	10.2	9.2	10.5	7.4	8.9	8.2	10.1	11.0	10.1
Northeast	8.9	7.6	9.4	9.1	7.6	8.2	6.3	6.9	6.5	8.0	8.1	8.2

Saint John Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Eastnortheast	12.1	11.2	11.4	9.0	7.5	7.6	4.9	7.6	7.4	8.1	10.2	9.8
East	13.3	11.2	11.5	10.5	8.9	8.4	6.6	7.2	8.1	9.6	9.5	10.2
Eastsoutheast	13.4	13.3	13.3	10.8	10.0	8.4	7.9	8.2	8.9	11.1	12.0	12.6
Southeast	12.7	10.5	8.5	9.2	9.1	7.6	6.9	6.5	7.3	9.5	11.7	12.0
Southsoutheast	14.2	11.7	9.4	9.6	9.2	8.0	7.5	7.7	7.9	9.0	13.7	14.5
South	14.1	12.9	11.4	9.8	9.2	9.1	8.7	8.2	8.9	10.1	13.5	13.9
Southsouthwest	16.0	14.1	12.5	12.2	11.4	11.3	10.1	10.5	11.6	12.2	15.2	15.5
Southwest	13.8	11.6	11.5	12.0	12.4	11.9	10.6	10.6	10.9	10.9	11.9	12.7
Westsouthwest	11.1	10.6	12.4	10.2	10.9	11.0	9.6	9.2	9.4	10.5	10.2	11.8
West	11.4	10.1	11.8	9.3	8.9	7.9	7.6	8.2	8.2	9.6	9.9	11.3
Westnorthwest	13.1	11.8	13.1	11.8	10.9	10.5	8.7	8.9	9.6	11.2	12.0	12.4
Northwest	12.7	12.1	13.5	12.3	11.7	11.3	9.6	8.9	10.5	11.5	11.8	11.7
Northnorthwest	11.8	11.5	12.6	11.3	11.3	11.1	9.3	9.2	10.3	11.8	11.1	11.0

Temperature and precipitation data courtesy of Environment Canada

PUB 145

Yarmouth—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1014	1013	1013	1015	1014	1014	1015	1016	1018	1018	1016	1015
Temperature (˚C)												
Mean	-.30	-3.3	0.2	4.7	9.3	13.4	16.3	16.5	13.6	9.3	4.8	-0.4
Mean daily maximum	0.7	0.4	3.8	8.4	13.5	17.6	20.4	20.7	17.8	13.2	8.4	3.3
Mean daily minimum	-6.8	-7.1	-3.4	0.8	5.1	9.2	12.1	12.4	9.4	5.3	1.3	-4.3
Extreme high	13.3	12.8	16.2	22.4	24.9	28.3	30.0	29.4	29.4	25.0	18.0	16.1
Extreme low	-21.1	-21.1	-17.6	-9.4	-2.2	1.7	5.8	2.0	-2.3	-3.9	-9.0	-20.0
Relative Humidity (per cent)												
Mean	83	80	81	81	80	83	88	89	87	83	82	84
Cloud Cover (tenths)												
Mean	8.1	7.4	6.7	6.5	6.3	6.6	6.3	6.1	5.1	5.6	7.1	8.1
Precipitation (millimeters)												
Mean	126.4	106.5	95.3	100.9	96.6	93.6	84.7	82.2	87.5	107.4	134.8	143.5
Maximum in 24 hours	69.6	61.4	96.0	72.4	72.4	79.0	92.5	101.1	103.4	172.5	111.3	110.7
Mean amount of snow (cm)	67.1	49.6	27.6	8.9	1.0	0	0	0	0	1.9	6.3	42.9
Mean number of days with precipitiation	20	16	14	13	12	11	10	9	9	10	15	18
Mean number of days with snow	14	11	7	2	<0.5	0	0	0	0	<0.5	2	10
Wind Speed (knots)												
Mean	11.3	10.4	10.8	9.8	8.9	8.1	7.1	7.3	8.0	9.0	10.1	10.5
Wind Direction (percentage of observations)												
North	12	9	10	6	5	3	2	3	8	7	7	9
Northnortheast	6	4	4	3	2	2	1	1	3	3	5	4
Northeast	5	4	6	5	2	2	1	2	3	4	5	5
Eastnortheast	5	4	5	3	2	1	1	2	3	4	4	4
East	7	5	7	6	5	4	2	4	6	6	6	8
Eastsoutheast	3	4	4	3	3	3	2	2	3	3	4	3
Southeast	3	4	4	4	5	5	5	4	3	4	4	4
Southsoutheast	2	3	2	3	5	5	5	4	3	3	4	2
South	3	4	3	8	10	13	15	10	8	7	8	4
Southsouthwest	2	2	2	4	5	8	8	7	6	5	4	3
Southwest	4	5	3	6	9	11	12	12	10	8	5	5
Westsouthwest	4	4	3	5	8	10	9	9	7	6	5	4
West	5	7	9	11	11	11	13	12	9	9	7	6
Westnorthwest	8	8	9	9	7	6	6	7	6	6	8	8
Northwest	15	15	14	11	10	6	7	9	11	10	11	14
Northnorthwest	12	13	10	8	6	4	3	4	6	8	8	11
Calm	4	5	5	5	5	6	8	8	6	5	3	6
Wind Direction (mean speed in knots)												
North	10.7	9.7	10.2	8.9	8.3	6.9	6.3	6.9	7.6	8.9	8.8	9.1

Yarmouth—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Northnortheast	9.6	9.5	9.7	9.2	9.2	9.2	5.8	6.3	8.2	8.6	8.8	8.2
Northeast	7.9	8.9	9.0	9.6	7.5	8.4	6.0	7.2	7.2	8.0	8.4	7.6
Eastnortheast	11.6	9.1	11.3	11.5	8.7	9.8	6.3	8.7	8.9	8.3	8.7	9.7
East	12.6	10.9	11.5	11.6	9.8	9.8	6.5	7.4	8.2	8.7	8.9	8.6
Eastsoutheast	10.7	10.9	13.7	11.5	10.0	9.0	6.8	8.9	8.8	10.5	10.2	10.3
Southeast	9.6	10.3	11.0	10.2	9.6	8.5	7.0	7.7	8.3	10.9	10.2	10.2
Southsoutheast	11.0	11.9	10.7	11.1	10.1	8.4	7.7	7.4	9.9	10.3	11.7	11.8
South	11.9	10.7	11.2	11.6	9.9	8.7	8.2	8.1	9.6	10.2	12.8	12.2
Southsouthwest	13.9	11.5	12.0	11.1	11.4	10.1	9.3	10.1	11.1	10.8	11.9	13.2
Southwest	11.6	11.1	10.5	9.9	10.1	7.8	9.3	9.3	9.4	9.0	11.4	11.9
Westsouthwest	11.0	9.6	10.5	9.	9.9	9.0	7.6	7.9	8.2	8.6	10.4	11.5
West	11.3	10.6	11.1	9.2	8.4	7.6	6.9	7.0	7.1	9.4	10.9	13.2
Westnorthwest	14.3	12.6	12.7	10.1	8.7	8.0	7.4	7.5	8.1	10.6	12.7	13.5
Northwest	13.0	12.0	11.9	10.2	8.9	7.6	7.2	7.3	8.2	9.7	11.7	12.5
Northnorthwest	12.5	12.0	11.8	10.6	9.5	7.8	6.9	7.1	8.3	10.2	10.2	12.0

Temperature and precipitation data courtesy of Environment Canada

PUB 145

Sable Island—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1013	1012	1012	1014	1016	1014	1016	1016	1018	1017	1015	1014
Temperature (˚C)												
Mean	-0.2	-1.3	0.5	3.4	7.0	11.0	15.5	17.6	15.5	11.5	7.0	2.3
Mean daily maximum	2.7	1.4	3.0	5.8	9.5	13.7	18.2	20.3	18.2	14.1	9.6	5.2
Mean daily minimum	-3.2	-4.2	-2.1	0.9	4.4	8.2	12.7	14.8	12.7	8.8	4.4	-0.6
Extreme high	14.5	12.8	13.5	13.9	17.8	21.7	29.6	27.8	27.0	22.8	18.9	15.6
Extreme low	-19.4	-18.3	-13.3	-8.9	-8.3	1.7	4.4	4.4	0.6	-1.2	-7.8	-16.7
Relative Humidity (per cent)												
Mean	83	82	86	87	88	90	95	91	86	81	82	83
Cloud Cover (tenths)												
Mean	8.6	8.1	7.4	7.1	7.0	7.5	7.3	6.8	6.2	6.7	7.9	8.6
Precipitation (millimeters)												
Mean	148.4	112.2	113.3	100.6	99.6	107.7	100.6	111.3	104.7	121.0	141.5	124.9
Maximum in 24 hours	99.3	52.2	87.6	66.0	99.6	140.7	85.3	155.7	99.2	166.1	84.8	77.5
Mean amount of snow (cm)	37.3	30.0	24.1	8.0	0.8	0	0	0	0	0	4.0	18.3
Mean number of days with precipitiation	18	17	16	13	12	12	10	11	10	13	15	18
Mean number of days with snow	10	9	7	2	<0.5	0	0	0	0	0	1	7
Wind Speed (knots)												
Mean	17.5	16.8	16.2	14.3	12.3	10.7	9.9	10.1	11.8	13.5	15.4	16.6
Wind Direction (percentage of observations)												
North	5	7	9	6	5	4	2	2	6	4	5	5
Northnortheast	3	3	5	4	4	2	1	2	4	3	3	4
Northeast	5	4	8	6	7	5	3	5	7	5	6	5
Eastnortheast	3	2	4	2	4	2	2	2	3	2	4	2
East	6	5	5	6	3	4	2	3	4	5	5	5
Eastsoutheast	2	3	3	3	2	3	3	3	3	3	2	3
Southeast	4	6	5	7	8	6	7	8	5	7	8	7
Southsoutheast	2	2	2	3	3	3	5	4	4	3	4	3
South	4	3	2	6	9	9	13	8	7	6	7	5
Southsouthwest	3	2	2	5	7	11	11	8	5	4	5	4
Southwest	7	7	7	11	15	24	27	22	14	9	8	6
Westsouthwest	5	6	6	7	8	9	7	11	9	9	4	5
West	14	15	12	11	10	8	8	12	11	14	11	14
Westnorthwest	11	11	9	6	4	3	3	3	4	7	9	11
Northwest	20	18	15	12	8	5	4	5	9	13	14	16
Northnorthwest	5	6	6	5	3	2	1	1	4	5	5	5
Calm	1	<1	<1	<1	<1	<1	1	1	1	1	<1	<1
Wind Direction (mean speed in knots)												
North	14.5	15.0	15.6	13.3	11.8	8.5	6.9	9.5	11.9	12.1	13.5	13.9

Sable Island—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Northnortheast	14.8	15.9	16.1	14.8	15.6	10.2	8.6	9.9	13.4	14.5	16.0	15.2
Northeast	16.7	14.3	17.2	14.9	12.2	9.0	10.4	10.2	12.5	12.9	16.2	17.1
Eastnortheast	19.5	17.2	16.9	13.1	12.4	11.6	11.0	12.4	11.6	15.0	15.7	13.8
East	17.5	13.6	17.0	16.1	12.5	12.5	9.5	10.0	10.2	11.1	13.5	14.2
Eastsoutheast	12.0	19.1	18.4	16.2	13.6	12.2	10.8	11.1	11.8	14.7	14.4	17.6
Southeast	17.9	18.1	15.6	14.3	13.5	11.1	9.6	9.8	10.5	14.3	15.3	16.8
Southsoutheast	17.6	15.5	13.0	12.3	12.2	11.4	10.9	10.2	11.4	13.5	18.2	16.2
South	16.8	14.2	13.4	12.9	11.5	10.5	10.2	9.6	12.0	12.3	15.2	14.2
Southsouthwest	15.8	14.7	13.6	13.6	12.6	11.5	10.4	9.6	12.2	12.2	13.4	14.7
Southwest	15.5	15.6	14.3	13.5	12.2	10.9	10.2	10.3	11.4	12.1	13.4	13.9
Westsouthwest	18.2	18.5	16.4	13.5	12.8	12.0	10.3	11.5	11.9	13.7	14.7	18.8
West	18.0	16.8	16.9	14.2	21.1	10.1	9.2	9.8	10.9	13.8	14.3	18.0
Westnorthwest	18.5	17.6	18.1	15.6	11.5	9.6	8.2	10.0	11.9	15.3	17.2	18.1
Northwest	18.8	18.3	16.5	14.5	12.6	9.1	7.8	9.3	12.9	14.9	17.0	18.1
Northnorthwest	17.8	17.9	16.2	14.9	12.8	9.0	7.9	10.3	13.5	14.8	17.5	16.8

Temperature and precipitation data courtesy of Environment Canada

PUB 145

Charlottetown Harbour—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1013	1012	1012	1013	1014	1013	1014	1016	1016	1016	1014	1013
Temperature (˚C)												
Mean	-7.2	-7.5	-3.0	2.7	9.2	14.8	18.8	18.4	14.0	8.6	3.1	-3.6
Mean daily maximum	-3.3	-3.4	0.7	6.5	13.8	19.4	23.1	22.7	18.0	12.2	6.1	-0.2
Mean daily minimum	-11.3	-11.7	-6.7	-1.1	4.5	10.1	14.4	14.1	9.9	5.0	0.0	-7.2
Extreme high	12.5	12.2	15.6	26.7	31.7	31.7	33.3	36.7	31.1	26.7	21.0	16.7
Extreme low	-30.6	-29.2	-27.2	-16.1	-6.7	-0.6	2.8	3.9	-0.6	-5.6	-15.0	-27.8
Relative Humidity (per cent)												
Mean	86	83	86	80	72	77	78	79	78	82	85	84
Cloud Cover (tenths)												
Mean	7.4	6.8	6.7	6.9	6.8	6.7	6.1	6.4	5.8	6.4	7.8	7.5
Precipitation (millimeters)												
Mean	97.1	82.3	83.1	88.3	94.2	87.5	78.5	90.1	91.9	112.4	115.0	116.7
Maximum in 24 hours	64.0	51.6	54.6	56.6	63.8	72.6	63.0	87.6	163.8	97.8	59.4	58.4
Mean amount of snow (cm)	67.4	56.0	48.1	28.1	3.5	0	0	0	0	2.8	18.4	60.5
Mean number of days with precipitiation	18	13	15	13	13	12	11	12	12	13	17	18
Mean number of days with snow	14	12	11	5	1	0	0	0	0	<0.5	4	13
Wind Speed (knots)												
Mean	12.2	11.5	12.2	10.9	10.2	9.6	8.4	8.7	9.3	10.2	10.9	11.4
Mean number of days with gales	1	1	1	<0.5	0	0	0	<0.5	0	<0.5	<0.5	1
Wind Direction (percentage of observations)												
North	7	6	10	10	8	6	4	4	6	6	5	3
Northnortheast	5	5	8	8	6	5	3	3	4	4	5	4
Northeast	4	5	8	7	5	6	4	4	4	4	4	4
Eastnortheast	4	3	4	4	3	2	2	2	2	4	4	3
East	5	4	4	5	4	4	3	3	3	3	4	3
Eastsoutheast	3	3	3	3	4	3	2	2	2	2	2	2
Southeast	2	3	3	3	4	3	3	3	3	3	4	3
Southsoutheast	3	3	3	4	5	4	4	3	3	3	5	3
South	3	3	3	5	7	7	9	6	5	5	5	4
Southsouthwest	4	4	3	6	8	10	12	9	9	7	6	5
Southwest	5	5	5	7	10	13	16	16	13	10	6	6
Westsouthwest	10	12	8	8	12	18	16	18	15	14	11	14
West	18	18	10	8	7	7	8	11	12	15	19	20
Westnorthwest	12	11	9	5	4	2	3	5	6	8	10	12
Northwest	6	7	7	6	4	3	3	4	5	4	4	5
Northnorthwest	6	5	9	8	6	4	4	7	5	5	4	4
Calm	3	3	3	3	3	3	4	3	3	3	2	3
Wind Direction (mean speed in knots)												

Charlottetown Harbour—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
North	14.0	14.0	13.5	12.9	11.9	11.5	8.9	8.6	10.6	10.9	12.2	12.5
Northnortheast	15.5	14.2	14.4	13.7	12.1	11.5	8.5	9.6	10.3	12.0	13.5	13.0
Northeast	16.0	12.9	15.1	13.3	10.4	10.5	8.6	9.8	10.9	10.8	12.4	13.7
Eastnortheast	14.2	13.1	13.1	11.6	10.0	9.9	8.4	8.5	8.9	10.9	12.6	12.4
East	11.3	11.6	10.8	9.0	10.4	8.2	6.5	8.2	7.4	7.0	8.8	10.4
Eastsoutheast	14.9	13.0	12.9	10.5	9.6	8.5	7.5	7.8	8.0	10.1	9.7	12.5
Southeast	11.3	10.2	10.8	8.7	8.2	7.5	7.5	7.6	7.8	9.9	10.4	13.0
Southsoutheast	10.7	9.6	9.2	9.6	9.3	7.8	7.8	7.7	8.0	9.7	11.1	10.2
South	10.0	8.2	8.2	8.2	8.2	7.1	7.4	7.6	7.6	8.8	10.6	9.8
Southsouthwest	9.7	9.1	9.1	9.6	8.9	8.8	8.6	8.3	8.9	9.7	10.8	9.1
Southwest	9.2	8.9	9.6	9.1	9.7	9.6	9.0	8.9	9.7	10.1	9.7	9.9
Westsouthwest	11.3	11.8	12.0	10.9	11.9	11.4	10.2	10.3	10.6	11.1	10.7	12.1
West	12.5	11.4	12.4	10.4	11.0	10.1	9.3	9.1	9.3	11.1	11.3	12.0
Westnorthwest	13.4	12.5	13.7	11.9	12.0	10.6	8.9	8.4	9.8	11.0	12.0	12.5
Northwest	11.9	12.5	11.7	11.2	11.4	9.8	8.3	9.2	9.5	10.8	10.9	10.8
Northnorthwest	14.8	13.2	14.2	12.9	13.0	11.6	9.7	9.9	11.0	11.5	12.4	12.0
Visibility												
Days with visibility = or < 1,000m	3	3	3	5	4	5	2	3	2	3	1	2

Temperature and precipitation data courtesy of Environment Canada

PUB 145

Chatham Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1014	1012	1012	1013	1014	1012	1012	1013	1016	1016	1015	1013
Temperature (˚C)												
Mean	-9.3	-8.7	-3.4	2.9	9.5	15.4	19.2	18.0	13.4	7.5	1.3	-6.6
Mean daily maximum	-4.4	-3.2	1.4	7.8	15.5	21.6	25.3	24.1	19.2	12.7	11.4	-2.1
Mean daily minimum	-14.2	-14.3	-8.3	-2.1	9.2	9.2	13.1	11.9	7.6	2.3	-2.8	-11.0
Extreme high	11.7	12.2	22.8	26.1	36.7	36.7	36.7	37.8	32.3	27.8	21.1	16.1
Extreme low	-31.7	-33.0	-29.4	-17.2	-2.2	-2.2	2.8	0.6	-5.0	-8.9	-18.9	-28.0
Relative Humidity (per cent)												
Mean	76	73	72	70	66	67	72	71	74	77	81	79
Cloud Cover (tenths)												
Mean	6.5	6.3	6.5	6.4	6.9	7.0	6.4	6.2	5.8	6.2	7.0	6.3
Precipitation (millimeters)												
Mean	97.0	90.6	83.8	75.7	80.2	83.6	75.7	83.6	87.1	88.4	112.5	92.9
Maximum in 24 hours	27.9	40.6	43.2	53.3	44.7	38.1	75.2	41.1	61.2	45.7	61.7	68.6
Mean amount of snow	68.1	70.6	54.9	28.4	1.4	0	0	0	0.5	2.8	24.4	57.4
Mean number of days with precipitiation	15	13	13	12	12	13	12	12	10	12	14	14
Mean number of days with snow	13	11	10	6	1	0	0	0	<0.5	1	5	11
Wind Speed (knots)												
Mean	9.0	8.9	9.4	8.8	8.8	8.9	7.9	7.6	8.1	8.4	8.4	8.4
Wind Direction (percentage of observations)												
North	6	4	6	5	5	3	3	3	3	4	5	6
Northnortheast	5	4	6	6	4	4	2	3	3	4	5	4
Northeast	7	8	9	11	9	8	5	4	4	4	5	3
Eastnortheast	4	4	7	8	7	7	4	3	3	3	3	2
East	2	3	4	4	4	4	3	3	2	2	2	1
Eastsoutheast	1	1	1	1	2	2	1	1	1	1	1	1
Southeast	1	1	1	1	2	2	2	2	1	2	2	1
Southsoutheast	1	1	1	2	2	2	2	1	2	2	3	1
South	2	3	3	4	5	5	7	6	6	5	5	4
Southsouthwest	4	3	2	6	7	12	13	14	11	9	7	6
Southwest	10	11	6	10	12	16	19	18	18	15	12	14
Westsouthwest	13	14	9	9	10	10	11	12	13	13	13	16
West	11	11	9	7	8	6	9	10	10	10	10	11
Westnorthwest	11	12	12	7	7	5	5	6	7	8	10	10
Northwest	9	8	10	8	6	4	5	5	6	7	6	7
Northnorthwest	7	5	6	5	4	4	2	3	4	5	5	5
Calm	6	7	8	6	6	6	7	6	6	6	6	8
Wind Direction (mean speed in knots)												
North	8.9	8.2	8.9	8.8	6.9	7.5	6.3	6.4	6.9	7.3	7.7	8.1
Northnortheast	10.6	10.3	11.0	10.0	7.8	8.6	7.0	7.8	7.2	8.2	9.0	9.2

Chatham Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Northeast	11.4	10.3	10.5	10.0	8.4	8.8	7.7	7.7	7.6	8.5	8.2	9.0
Eastnortheast	10.0	8.9	10.9	9.5	9.3	9.2	7.6	8.7	8.4	8.7	9.6	9.9
East	7.3	8.4	8.6	7.4	7.6	7.0	6.4	5.9	6.8	7.3	6.5	7.6
Eastsoutheast	7.1	7.8	8.1	7.1	7.7	8.0	6.3	6.9	6.5	7.7	7.3	11.5
Southeast	7.6	6.0	6.1	7.1	7.4	7.1	6.4	6.4	6.8	7.3	6.9	9.3
Southsoutheast	7.8	8.0	7.7	8.3	8.8	8.1	7.8	6.3	7.5	8.8	8.9	8.9
South	7.8	8.4	9.5	10.0	9.6	9.8	8.7	7.8	8.9	8.8	9.6	7.9
Southsouthwest	9.4	10.2	10.7	11.2	11.6	12.0	10.7	9.4	10.6	10.1	10.0	9.8
Southwest	8.9	9.6	9.7	9.5	10.2	10.0	9.2	8.2	9.3	9.6	8.9	8.9
Westsouthwest	9.6	9.7	10.7	8.8	10.0	9.3	8.8	8.2	8.5	8.9	9.4	9.5
West	9.5	8.7	9.8	8.2	8.9	8.4	7.9	8.0	8.0	8.9	9.0	8.8
Westnorthwest	10.2	10.6	11.4	10.4	10.1	10.4	9.0	9.0	9.2	10.8	10.5	10.1
Northwest	9.9	9.6	9.9	8.9	9.5	8.9	8.2	7.5	8.7	9.0	9.1	8.8
Northnorthwest	9.1	9.3	9.9	7.8	8.9	8.4	7.6	7.7	8.1	7.6	8.0	8.0

Temperature and precipitation data courtesy of Environment Canada

PUB 145

Sept-Iles—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1014	1013	1012	1013	1013	1012	1011	1012	1014	1015	1014	1013
Temperature (˚C)												
Mean	-14.6	-13.0	-6.8	0.0	5.9	11.6	15.2	14.2	9.2	3.4	-2.7	-11.0
Mean daily maximum	-9.3	-7.4	-1.8	3.9	10.3	16.4	19.6	18.7	13.6	7.5	11.0	-6.3
Mean daily minimum	-20.1	-18.7	-12.1	-4.0	1.3	6.8	10.8	9.6	4.7	-0.7	-6.6	-15.8
Extreme high	10.0	10.6	11.7	19.2	28.3	32.2	32.2	31.1	29.4	22.2	16.9	9.4
Extreme low	-43.3	-38.3	-31.7	-24.4	-11.7	-2.8	1.7	-0.6	-6.5	-12.8	-28.9	-36.5
Relative Humidity (per cent)												
Mean	81	80	79	72	71	71	78	79	75	79	84	78
Cloud Cover (tenths)												
Mean	5.8	5.8	5.6	6.2	6.5	6.7	6.5	6.0	5.9	6.0	6.7	5.4
Precipitation (millimeters)												
Mean	86.8	68.9	80.9	93.4	96.3	92.4	90.8	99.6	111.5	10.8	99.6	107.0
Maximum in 24 hours	31.2	88.6	39.6	74.9	69.6	68.1	84.8	76.5	98.6	53.1	114.6	59.8
Mean amount of snow (cm)	90.4	62.3	63.1	39.4	7.9	0	0	0	0	10.0	47.1	95.1
Mean number of days with precipitiation	16	13	11	10	11	12	13	12	11	11	13	13
Mean number of days with snow	15	12	10	6	1	<0.5	0	0	<0.5	1	8	12
Wind Speed (knots)												
Mean	12.4	11.1	12.0	10.3	10.5	9.3	8.4	8.4	9.1	9.6	10.9	11.5
Wind Direction (percentage of observations)												
North	14	11	14	10	6	5	4	5	6	8	8	13
Northnortheast	13	9	10	8	4	4	3	4	4	5	7	11
Northeast	11	10	9	8	7	6	6	7	6	7	9	10
Eastnortheast	5	4	5	7	7	8	8	6	6	6	7	5
East	6	8	11	12	16	15	14	12	10	9	9	5
Eastsoutheast	1	2	2	3	4	4	4	3	3	3	3	1
Southeast	<1	1	2	4	6	7	8	5	4	3	2	1
Southsoutheast	<1	1	1	2	2	4	4	2	2	1	1	<1
South	<1	1	2	3	3	3	3	3	2	1	1	<1
Southsouthwest	1	1	1	2	3	3	3	2	2	2	2	1
Southwest	1	3	3	6	6	7	7	10	8	5	4	2
Westsouthwest	3	5	3	3	3	3	4	5	6	5	4	3
West	9	9	4	3	5	4	5	7	8	10	8	9
Westnorthwest	11	9	5	4	5	3	4	6	7	8	9	12
Northwest	12	11	11	8	8	7	6	8	10	11	12	12
Northnorthwest	9	10	11	9	7	6	5	4	6	8	8	10
Calm	4	5	6	8	8	11	12	11	10	8	6	5
Wind Direction (mean speed in knots)												
North	12.3	12.2	14.9	12.9	12.3	11.4	10.2	9.0	10.4	11.7	11.8	11.7

Sept-Iles—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Northnortheast	11.5	10.5	12.7	11.3	9.8	9.0	8.2	8.2	8.2	8.8	8.9	10.5
Northeast	10.0	9.7	9.2	8.6	7.7	7.3	6.7	7.0	7.2	7.3	8.5	9.2
Eastnortheast	13.9	12.2	11.3	10.7	11.2	10.0	9.6	8.9	9.5	9.0	12.0	11.5
East	16.1	15.1	14.2	12.6	13.2	12.2	11.5	11.2	11.6	11.8	13.8	14.9
Eastsoutheast	14.2	10.9	14.5	10.6	10.6	9.6	8.7	8.2	9.2	8.8	12.4	13.5
Southeast	11.7	7.2	8.5	7.8	8.2	8.2	10.2	7.7	7.9	7.2	11.4	11.8
Southsoutheast	9.4	6.2	7.1	6.3	6.9	6.9	6.8	6.4	6.7	6.4	8.2	9.5
South	10.6	5.8	5.6	6.4	7.3	6.9	6.3	6.4	6.3	5.8	7.3	8.9
Southsouthwest	12.2	9.1	8.8	8.9	9.2	8.8	8.2	8.5	8.2	7.9	10.7	14.2
Southwest	11.5	10.9	10.5	10.6	11.9	11.2	10.5	10.7	10.7	10.2	12.7	14.7
Westsouthwest	13.5	11.5	10.2	9.6	10.5	9.4	10.2	10.2	10.3	10.7	11.4	12.9
West	13.1	11.6	10.6	10.1	10.9	9.5	9.9	9.1	10.2	10.2	11.3	12.6
Westnorthwest	14.2	12.4	12.9	12.1	12.7	12.2	11.1	10.4	11.8	11.9	12.2	13.0
Northwest	13.5	12.2	14.4	13.5	14.1	14.0	11.5	10.8	11.7	12.9	12.9	12.9
Northnorthwest	13.1	13.0	13.6	14.3	15.3	12.9	11.7	11.1	11.5	12.3	12.7	12.9
Visibility												
Mean number of days with visibility < or = 1,000mn	3	2	3	5	6	6	7	6	5	5	5	2

Temperature and precipitation data courtesy of Environment Canada

PUB 145

Quebec Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1017	1016	1014	1014	1014	1012	1013	1014	1017	1017	1013	1016
Temperature (˚C)												
Mean	-12.4	-11.0	-4.6	3.3	10.8	16.3	19.1	17.6	12.5	6.5	-0.5	-9.1
Mean daily maximum	-7.7	-6.0	0.1	7.9	16.7	22.2	24.9	23.1	17.9	11.0	2.9	-4.9
Mean daily minimum	-17.3	-16.1	-9.4	-1.5	4.9	10.3	13.2	12.0	7.1	2.0	-4.1	-13.3
Extreme high	10.0	11.7	17.8	29.9	33.0	33.9	35.6	34.4	33.9	28.3	20.0	13.9
Extreme low	-35.4	-36.1	-30.0	-18.9	-7.8	-0.6	1.8	1.4	-4.8	-10.0	-24.0	-32.2
Relative Humidity (per cent)												
Mean	76	74	68	64	58	65	70	74	75	74	80	77
Cloud Cover (tenths)												
Mean	6.6	6.3	5.9	6.3	6.3	6.4	5.9	5.5	5.8	6.1	7.4	6.8
Precipitation (millimeters)												
Mean	90.0	74.4	85.0	75.5	99.9	110.2	118.5	119.6	123.7	96.0	106.1	108.9
Maximum in 24 hours	41.0	53.4	63.5	55.4	54.2	78.0	59.9	55.4	81.2	56.9	45.7	47.8
Mean amount of snow (cm)	77.6	64.8	51.2	19.3	1.0	0	0	0	0	3.4	37.6	82.1
Mean number of days with precipitiation	17	14	13	12	12	13	13	13	12	12	16	17
Mean number of days with snow	15	14	10	4	<0.5	<0.5	0	0	<0.5	1	8	15
Wind Speed (knots)												
Mean	11.4	11.3	10.9	9.8	10.3	9.5	8.4	8.3	8.6	9.3	10.1	10.5
Mean number of days with gales	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0	0	0	<0.5	1	1
Wind Direction (percentage of observations)												
North	4	4	3	5	5	5	6	8	6	5	4	5
Northnortheast	3	4	3	4	3	3	3	3	4	4	4	4
Northeast	7	9	11	11	9	10	6	8	9	9	10	8
Eastnortheast	13	14	16	20	16	11	10	8	10	13	16	13
East	3	3	5	6	6	4	4	4	4	4	5	4
Eastsoutheast	—	1	1	1	1	1	1	1	1	1	1	1
Southeast	—	1	1	1	1	1	1	1	1	—	1	1
Southsoutheast	—	—	—	1	1	1	1	1	—	—	—	—
South	1	1	1	2	1	2	2	1	1	1	1	1
Southsouthwest	3	3	4	3	4	4	5	4	3	3	3	3
Southwest	16	14	12	11	13	16	16	14	14	11	11	13
Westsouthwest	22	20	12	10	13	15	15	14	15	17	15	20
West	11	11	9	7	8	8	9	11	10	11	10	11
Westnorthwest	5	5	7	6	5	5	5	5	6	5	6	4
Northwest	4	3	6	5	3	5	4	5	5	5	4	3
Northnorthwest	2	2	4	3	4	3	3	4	4	4	3	2
Calm	6	5	5	4	4	6	9	8	7	7	6	7
Wind Direction (mean speed in knots)												

Quebec Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
North	5.6	6.9	6.6	7.0	7.1	6.8	6.1	6.3	6.3	5.9	5.7	6.1
Northnortheast	5.7	5.8	6.1	5.9	6.3	6.3	5.4	6.4	5.7	5.9	5.6	5.5
Northeast	9.6	10.5	9.6	8.4	8.2	8.4	6.8	8.4	8.2	9.1	9.0	8.8
Eastnortheast	13.7	13.0	13.0	11.5	10.9	10.6	9.4	10.0	10.3	11.2	12.1	12.4
East	10.7	10.2	9.6	9.9	9.7	8.9	7.5	8.2	7.9	9.7	10.0	11.5
Eastsoutheast	5.2	5.6	5.8	7.1	6.5	6.2	6.1	6.3	6.4	5.7	6.6	6.1
Southeast	2.7	4.3	4.0	4.9	6.2	4.9	5.2	5.2	4.9	3.9	5.6	5.1
Southsoutheast	4.4	4.9	.4	5.6	6.3	5.3	5.9	5.5	4.3	5.1	5.6	5.1
South	6.0	5.5	6.3	6.3	8.6	7.6	6.7	6.2	6.9	5.4	5.6	5.5
Southsouthwest	9.6	9.5	10.0	9.8	10.7	10.9	9.9	9.4	8.9	8.5	10.0	8.2
Southwest	12.8	13.2	13.4	10.8	12.4	11.3	10.4	10.1	10.7	10.2	12.2	11.6
Westsouthwest	14.4	14.1	13.5	12.2	12.9	11.9	11.1	10.9	11.2	11.5	12.4	13.8
West	13.2	13.2	12.6	11.5	12.2	11.3	10.5	10.2	10.1	11.2	12.1	13.0
Westnorthwest	13.7	11.6	12.9	12.2	12.7	11.7	10.8	10.1	10.1	11.0	12.0	12.3
Northwest	9.9	11.0	11.0	10.2	11.4	9.3	8.9	8.2	8.5	10.5	9.6	10.2
Northnorthwest	8.9	9.6	10.4	8.9	10.9	8.8	7.6	7.3	7.7	8.9	9.3	11.9

Temperature and precipitation data courtesy of Environment Canada

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Montreal Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1018	1016	1015	1015	1014	1013	1014	1015	1017	1017	1016	1017
Temperature (˚C)												
Mean	-10.3	-8.8	-2.4	5.7	12.9	18.0	20.8	19.4	14.5	8.3	1.6	-6.9
Mean daily maximum	-5.8	-4.2	2.0	10.7	18.5	23.4	26.2	24.6	19.8	13.0	5.2	-2.9
Mean daily minimum	-14.9	-13.5	-6.9	0.6	7.3	12.5	15.4	14.1	9.3	3.6	-2.0	-11.0
Extreme high	13.9	15.0	25.6	30.0	33.9	35.0	35.6	37.6	32.8	28.3	21.7	16.7
Extreme low	-37.8	-33.9	-29.4	-15.0	-4.4	0.7	6.1	3.3	-2.2	-7.2	-19.4	-32.4
Relative Humidity (per cent)												
Mean	75	76	71	63	58	64	67	68	71	70	76	78
Cloud Cover (tenths)												
Mean	6.7	6.4	6.1	6.3	6.4	6.1	5.7	5.4	5.6	5.9	7.3	7.0
Precipitation (millimeters)												
Mean	63.3	56.4	67.6	74.8	68.3	82.5	85.6	100.3	86.5	75.4	93.4	85.6
Maximum in 24 hours	32.5	39.4	37.6	34.5	37.6	61.6	57.4	68.8	81.9	63.8	55.1	50.8
Mean amount of snow (cm)	47.7	41.2	31.3	10.9	1.6	0	0	0	0	2.6	24.1	54.8
Mean number of days with precipitiation	17	15	13	13	13	12	12	11	12	12	16	17
Mean number of days with snow	15	13	9	2	<0.5	0	0	0	<0.5	1	6	14
Wind Speed (knots)												
Mean	9.9	10.0	9.9	9.2	8.8	8.2	7.4	7.1	7.6	8.5	9.6	9.1
Mean number of days with gales	1	<0.5	1	0	<0.5	0	0	0	0	0	<0.5	1
Wind Direction (percentage of observations)												
North	6	6	7	6	5	5	5	5	6	5	5	6
Northnortheast	11	14	13	11	6	7	5	6	9	9	9	12
Northeast	7	6	9	7	4	3	2	3	4	6	9	8
Eastnortheast	2	3	3	3	2	1	1	2	2	2	2	2
East	1	2	3	3	3	2	2	2	3	2	3	2
Eastsoutheast	2	1	2	3	3	2	2	3	2	3	3	2
Southeast	2	2	2	5	5	3	4	4	5	5	5	3
Southsoutheast	3	3	2	4	5	4	4	6	7	5	5	4
South	3	2	2	4	5	5	5	5	4	5	3	3
Southsouthwest	5	5	5	8	12	14	12	9	8	6	4	4
Southwest	14	13	12	12	16	19	17	16	15	14	13	12
Westsouthwest	19	17	15	11	12	13	13	12	12	12	14	15
West	13	12	12	9	8	8	10	10	8	11	12	13
Westnorthwest	5	4	6	5	5	5	5	5	6	5	6	5
Northwest	2	3	4	4	4	3	4	4	3	4	3	3
Northnorthwest	2	5	2	3	3	3	5	3	3	2	2	2
Calm	3	4	3	2	2	3	4	5	4	3	3	3
Wind Direction (mean speed in knots)												

Montreal Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
North	6.4	7.3	6.6	6.9	7.2	5.7	4.9	5.8	5.6	6.7	6.3	6.0
Northnortheast	11.0	11.4	11.2	10.2	8.2	8.5	7.0	7.0	7.4	8.8	9.2	9.4
Northeast	11.5	10.7	11.7	10.4	8.7	7.6	6.4	6.4	8.3	10.4	10.2	10.6
Eastnortheast	9.1	10.2	11.1	9.6	7.1	6.7	5.8	5.8	6.0	8.3	6.9	8.7
East	6.2	6.9	7.6	7.2	6.2	5.4	5.1	5.2	5.2	6.3	6.4	5.7
Eastsoutheast	7.0	7.1	7.9	8.9	7.7	6.3	6.1	5.7	6.5	7.5	7.1	6.0
Southeast	9.6	8.6	8.1	9.4	8.3	6.9	6.5	6.4	7.1	8.3	8.7	8.2
Southsoutheast	8.9	8.4	8.9	9.3	7.7	6.9	7.1	8.3	8.2	8.0	10.3	8.8
South	6.5	5.5	5.7	6.4	5.7	5.9	5.7	5.7	6.2	5.4	6.8	6.4
Southsouthwest	8.2	7.2	7.6	7.8	8.5	8.5	7.9	7.5	8.2	8.1	9.4	8.2
Southwest	11.0	10.6	10.2	9.9	10.3	9.6	8.7	8.8	9.7	9.6	11.3	10.5
Westsouthwest	12.6	13.2	13.0	12.2	11.5	10.5	9.7	9.1	10.1	10.4	12.4	11.7
West	11.1	12.0	11.1	10.2	10.6	9.9	8.9	8.5	8.9	9.3	11.3	10.3
Westnorthwest	9.9	9.8	9.7	9.2	9.8	9.5	8.4	7.9	7.7	10.0	11.5	10.2
Northwest	6.4	6.3	7.4	7.9	8.4	6.8	5.5	6.0	6.0	8.3	6.9	7.4
Northnorthwest	5.9	6.5	6.7	7.6	8.2	6.0	5.5	5.6	5.5	6.9	6.1	6.3
Visibility												
Days with visibility = or < 1,000m	2	3	2	2	1	1	1	2	2	3	3	3

Temperature and precipitation data courtesy of Environment Canada

The Prudent Mariner

Warning on the Use of Floating Aids to Navigation in General to Fix a Navigation Position

The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid. An aid to navigation also refers to any device or structure external to a craft, designed to assist in determination of position. This includes celestial, terrestial, and electronic means, such as the Global Positioning System (GPS) and Differential GPS (DGPS). Here, too, the prudent mariner will not rely solely on any single aid to navigation.

The buoy symbol is used to indicate the approximate position of the buoy body and the sinker, which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice or other natural causes, collisions, or other accidents. Many of these factors also apply to articulated lights. For the foregoing reasons, a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

Use of Foreign Charts

In the interest of safe navigation, caution should be exercised in the use of foreign charts not maintained through U.S. Notice to Mariners.

Foreign produced charts are occasionally mentioned in NIMA Sailing Directions when such charts may be of a better scale than U.S. produced charts. Mariners are advised that if or when such foreign charts are used for navigation it is their responsibility to maintain those charts from the Notice to Mariners of the foreign country producing the charts.

The mariner is warned that the buoyage systems, shapes, colors, and light rhythms used by other countries often have a different significance than the U.S. system.

Mariners are further warned about plotting positions, especially satellite-derived positions such as from GPS, onto foreign charts where the datum is unknown or the conversion from WGS-84 is unknown.

Chart Notes Regarding Different Datums

Particular caution should be exercised during a passage when transferring the navigational plot to an adjacent chart upon a different geodetic datum or when transferring positions from one chart to another chart of the same area, which is based upon a different datum. The transfer of positions should be done by bearings and distances from common features. Notes on charts should be read with care, as they give important information not graphically presented. Notes in connection with the chart title include the horizontal geodetic datum which serves as a reference for the values of the latitude and longitude of any point or object on the chart. The latitudes and longitudes of the same points or objects on a second chart of the same area, which is based upon a different datum, will differ from those of the first chart. The difference may be navigationally significant. Additionally, datum changes between chart editions could significantly affect the positions of navigational aids found in the List of Lights and other NIMA publications.

Positions obtained from satellite navigation systems, such as from GPS, are normally referred to the World Geodetic System 1984 (WGS-84) Datum. The differences between GPS satellite-derived positions and positions on some foreign charts cannot be determined: mariners are warned that these differences MAY BE SIGNIFICANT TO NAVIGATION and are therefore advised to use alternative sources of positional information, particularly when closing the shore or navigating in the vicinity of dangers.

The Prudent Mariner

Warning on the Use of Floating Aids to Navigation in General to Fix a Navigation Position

The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid. An aid to navigation also refers to any device or structure external to a craft, designed to assist in determination of position. This includes celestial, terrestial, and electronic means, such as the Global Positioning System (GPS) and Differential GPS (DGPS). Here, too, the prudent mariner will not rely solely on any single aid to navigation.

The buoy symbol is used to indicate the approximate position of the buoy body and the sinker, which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice or other natural causes, collisions, or other accidents. Many of these factors also apply to articulated lights. For the foregoing reasons, a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

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The mariner is warned that the buoyage systems, shapes, colors, and light rhythms used by other countries often have a different significance than the U.S. system.

Mariners are further warned about plotting positions, especially satellite-derived positions such as from GPS, onto foreign charts where the datum is unknown or the conversion from WGS-84 is unknown.

Chart Notes Regarding Different Datums

Particular caution should be exercised during a passage when transferring the navigational plot to an adjacent chart upon a different geodetic datum or when transferring positions from one chart to another chart of the same area, which is based upon a different datum. The transfer of positions should be done by bearings and distances from common features. Notes on charts should be read with care, as they give important information not graphically presented. Notes in connection with the chart title include the horizontal geodetic datum which serves as a reference for the values of the latitude and longitude of any point or object on the chart. The latitudes and longitudes of the same points or objects on a second chart of the same area, which is based upon a different datum, will differ from those of the first chart. The difference may be navigationally significant. Additionally, datum changes between chart editions could significantly affect the positions of navigational aids found in the List of Lights and other NIMA publications.

Positions obtained from satellite navigation systems, such as from GPS, are normally referred to the World Geodetic System 1984 (WGS-84) Datum. The differences between GPS satellite-derived positions and positions on some foreign charts cannot be determined: mariners are warned that these differences MAY BE SIGNIFICANT TO NAVIGATION and are therefore advised to use alternative sources of positional information, particularly when closing the shore or navigating in the vicinity of dangers.

The Prudent Mariner

Warning on the Use of Floating Aids to Navigation in General to Fix a Navigation Position

The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid. An aid to navigation also refers to any device or structure external to a craft, designed to assist in determination of position. This includes celestial, terrestial, and electronic means, such as the Global Positioning System (GPS) and Differential GPS (DGPS). Here, too, the prudent mariner will not rely solely on any single aid to navigation.

The buoy symbol is used to indicate the approximate position of the buoy body and the sinker, which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice or other natural causes, collisions, or other accidents. Many of these factors also apply to articulated lights. For the foregoing reasons, a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

Use of Foreign Charts

In the interest of safe navigation, caution should be exercised in the use of foreign charts not maintained through U.S. Notice to Mariners.

Foreign produced charts are occasionally mentioned in NIMA Sailing Directions when such charts may be of a better scale than U.S. produced charts. Mariners are advised that if or when such foreign charts are used for navigation it is their responsibility to maintain those charts from the Notice to Mariners of the foreign country producing the charts.

The mariner is warned that the buoyage systems, shapes, colors, and light rhythms used by other countries often have a different significance than the U.S. system.

Mariners are further warned about plotting positions, especially satellite-derived positions such as from GPS, onto foreign charts where the datum is unknown or the conversion from WGS-84 is unknown.

Chart Notes Regarding Different Datums

Particular caution should be exercised during a passage when transferring the navigational plot to an adjacent chart upon a different geodetic datum or when transferring positions from one chart to another chart of the same area, which is based upon a different datum. The transfer of positions should be done by bearings and distances from common features. Notes on charts should be read with care, as they give important information not graphically presented. Notes in connection with the chart title include the horizontal geodetic datum which serves as a reference for the values of the latitude and longitude of any point or object on the chart. The latitudes and longitudes of the same points or objects on a second chart of the same area, which is based upon a different datum, will differ from those of the first chart. The difference may be navigationally significant. Additionally, datum changes between chart editions could significantly affect the positions of navigational aids found in the List of Lights and other NIMA publications.

Positions obtained from satellite navigation systems, such as from GPS, are normally referred to the World Geodetic System 1984 (WGS-84) Datum. The differences between GPS satellite-derived positions and positions on some foreign charts cannot be determined: mariners are warned that these differences MAY BE SIGNIFICANT TO NAVIGATION and are therefore advised to use alternative sources of positional information, particularly when closing the shore or navigating in the vicinity of dangers.